

Innovative Business Model: The Production of Tamarind Jam with Pepper in the Northeastern Semiarid

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Abstract— *The Business Model Framework or "Business Model Canvas", as it is also known, is a tool that allows you to plan, create or reformulate some enterprise, thus contributing, to make it more innovative. Developed by the Swiss Alex Osterwalder (2000), it is an instrument that aims to understand in an easy and logical way the structure of a business, from the description of elements and phases that make up the enterprise, such as: customer segment, value proposition, distribution channels, customer relationship, revenue sources, key resources, key activities, key partnerships and costs. This study demonstrates the successful experience of a couple of entrepreneurs in the municipality of Juazeiro-Bahia, which boosted their family income, benefiting the fruit of tamarind (*Tamarindus indica*), allied to pepper (*Capsicum frutescens* 'Malagueta'), innovating and giving rise to Tamarind Pepper Jelly.*

I. INTRODUCTION

Agriculture is an essential activity for human life, obtaining through it food and raw material for the production of industrialized goods. In recent years, Brazilian agriculture has advanced safely towards sustainability, producing food or resources with the conservation of the environment, the well-being of society and profitability, highlighting, in this way, sustainable entrepreneurship that combines wealth generation with responsible development.

Allied to this, it should not be forgotten that, for the creation, development and innovation in enterprise, it is necessary to search for tools that help entrepreneurs in understanding the structure of business. In this sense, the Business Model Framework or "*Business Model Canvas*", is a tool that allows you to plan, create or reformulate some enterprise, thus contributing, to make it more innovative such model. This model was developed by the

Swiss Alex Osterwalder (2000), and is an instrument developed to understand the structure of a business in an easy and logical way.

The objective of this model is to describe the elements and phases that make up the enterprise, which are: customer segment, value proposition, distribution channels, customer relationship, revenue sources, main resources, key activities, key partnerships and costs.

Therefore, this study analyzes a successful experience of a couple of entrepreneurs, located in the municipality of Juazeiro-Bahia, in the Sertão Territory of São Francisco, who realized the opportunity to increase family income, benefiting a typical fruit of the region, tamarind (*Tamarindus indica*), allied with the pepper (*Capsicum frutescens* 'Malagueta'), an ingredient very characteristic of Bahia, thus innovating and giving rise to Tamarind Pepper Jam.

II. THEORETICAL REFERENCE

2.1 Agroecology

Agriculture is an activity that aims to cultivate the soil for the production of vegetables transforming the environment and being of extreme relevance for human survival. From the eighteenth century onwards, modern agriculture began in Western Europe with high-scale production and as a corollary there was an increase in the use of chemicals, genetically altered seeds [1].

Thus, although there was initially a hope that, with the increase of food, there would be a satisfaction of human needs, it was observed, from the 20th century, that the agricultural production model has caused harmful socio-environmental impacts, such as erosion, soil and water contamination, reduced biodiversity, impoverishment of rural populations and increased disease. Therefore, it became clear, the need to seek a more sustainable agriculture, thus appearing agroecology, which came as a new scientific approach helping in the search for more sustainable alternatives to conventional hegemonic style of agriculture [2].

Thus, it is possible to understand the need to develop a sustainable agriculture that starts from ecological perspectives optimizing the agrosystem, remediating the environmental and social problems caused by economic development.

In this context, it provides the necessary knowledge and methodologies to develop an agriculture that is both environmentally appropriate, productive, socially equitable and economically viable, promoting better use of domestic resources, mitigating the use of external inputs, bringing, in addition, efficiencies in productive diversification strategies [3].

In this way, agroecology is not only a concept, but an orientation, whose contributions go beyond the technological or agronomic aspects of production, integrating and articulating knowledge of different sciences, as well as popular knowledge [3]. It is a growing sector today, favoring farmers, as it enhances the development of sustainable practices in social, environmental and financial terms, and the growth of the market for the consumption of healthier foods.

It is also worth mentioning the rural entrepreneurship that is the management of property to generate satisfactory and sustainable results, being currently applied to small family farms or by entrepreneurs who seek innovations in their activity, it is important to highlight the importance of agroecology for the development of sustainable agriculture, thus reducing environmental problems and generating economic development, without alienating

social welfare and the conservation of natural resources and the growth of rural enterprises.

2.2 Entrepreneurship

Entrepreneurship seeks to visualize business opportunities, with permanent innovation, taking calculated risks, with the aim of obtaining income, recognition and growth in the market. [4] entrepreneurship means doing something new, different, changing the current situation and constantly seeking new business opportunities, focusing on innovation and value creation.

[5] it is a process of creative destruction through which existing products or production methods are destroyed and replaced by new ones. [6] entrepreneurship is the ability to create and constitute something from very little or almost nothing. [7] confirms that entrepreneurship is a process of transforming dreams into reality and wealth.

Therefore, whatever the definition of entrepreneurship, there are at least the following aspects: **A)** has initiative to create a new business; **B)** uses the available resources in a creative way, transforming the social and economic environment where you live; **C)** accepts taking the calculated risks and the possibility of failure.

2.3 Tamarind (*Tamarindus indica*) and Chili (*Capsicum frutescens* 'Malagueta')

Brazil is a great producer of fruit, possessing regional fruit plants with a variety of aromas and flavors, being privileged for its diversity of climate and soil, ensuring a very diversified fruit production. Therefore, it is one of the main producers and exporters of several native and exotic fruit species [8].

In the Northeast region of Brazil, the Petrolina/PE and Juazeiro/BA Polo is recognized worldwide for its economic dynamism in irrigated fruit production, and it is important to mention that, according to data from the Brazilian Agricultural Research Company [9], the majority of fruit production in the region is intended for in natura consumption, which requires a high standard of fruit quality.

In addition, as a way to find an alternative to the use of fruit outside the quality standard for in natura consumption, other activities such as the production of jellies can also be observed in the region, highlighting the production of mixed jellies that unite nutritional characteristics of two or more fruits, which, in addition to providing pleasant sensory characteristics, gradually conquer noble space in the consumer market [10].

Based on this, a couple of entrepreneurs from Juazeiro-BA, seeking alternatives to improve family income, began to produce jelly joining a typical fruit of the region, tamarind (*Tamarindus indica*), allied with pepper (*Capsicum frutescens* 'Malagueta'), giving rise to Tamarind Pepper Jam.

Tamarind belongs to the leguminous family and, originating in tropical Africa, from where it dispersed to all tropical regions. It is mainly used from pulp for the preparation of sweets, ice creams, liquors, concentrated juices and other foods [11]. In Brazil, the fruit is widely consumed in the North and Northeast regions.

It is worth mentioning the importance of tamarind for family farming, which is a highly organic fruit, making it necessary to produce products that use this fruit as raw material in order to increase their commercial interest [12]. In addition to tamarind, the entrepreneurial couple uses pepper as an ingredient for the production of mixed jam.

Pepper is the common name given to various plants, their fruits and seasonings obtained from it, with a generally spicy flavor. The cultivation of peppers of the genus *Capsicum* in Brazil is of great importance, either for generating incomes, mainly when the producer adds value to the product, or for its social importance, because the plant is cultivated by family farmers, generating employment, since the crop requires a large amount of labor, especially during the harvest [13].

The term chilli or chili pepper is used for varieties of *Capsicum frutescens*. *Capsicum* peppers stand out as part of the market for fresh vegetables in Brazil, as well as the strong segment of seasonings, seasonings and preserves worldwide [14].

Therefore, the pepper (*Capsicum frutescens* 'Malagueta') is a very characteristic ingredient of Bahia and together with the tamarind, brings a peculiar flavor to the Tamarind Jelly with Pepper produced in the Sertão Territory of São Francisco, generating income for a family group that undertook in the production of this mixed jelly, of differentiated flavor, that attracts local and regional consumers.

III. METHODOLOGY

The study was developed in the municipality of Juazeiro-BA, located in the São Francisco Sertão Territory, on the right bank of the São Francisco River, 507.9 km from the state capital, Salvador, having access by the BR-407 highway, this being the fastest route. The population of Juazeiro coexists with natural restrictions typical of the Brazilian semiarid region, scarce and irregular rains and, therefore, they seek in the potentialities

of the region the resources for the maintenance of life in the locality.

Thus, this is an exploratory and descriptive study, with a qualitative approach, based on the phenomenological method, which is used in qualitative research, and concerns itself with the direct description of the experience as it is, where reality is socially constructed and understood in the way it is interpreted, not posing itself as unique, and may exist as many as its interpretations [15].

In this sense, it is an exploratory study, because it seeks to provide greater familiarity with the problem under study, aiming to make it more explicit [15]. It is also descriptive, because it explains particularities of a given group, capturing descriptive aspects [16].

As for nature, this study brings a qualitative approach, where we sought to understand social phenomena with the smallest possible distance from the studied environment, seeking to understand and explain the dynamics of social relations [17].

The study was divided into 5 phases:

- 1) In the first phase we sought to know the problematic in thesis from the reading of theorists and published works that address on this theme, through search in journals websites such as *Scielo* and *Google Academic*, from the keywords "business model", "jelly" and "semiarid";
- 2) In the second phase, we sought to know in situ, from the observation, how is developed the enterprise of production of tamarind jelly with pepper, in order to better understand the context;
- 3) Then, an interview was made aiming to know more about the development of the enterprise, seeking to work from there the Business Model Framework or "*Business Model Canvas*";
- 4) Finally, a model was chosen that is considered suitable for such an enterprise aiming at enhancing the production and commercialization of the product;
- 5) Finally, the characteristics of the enterprise were presented to the entrepreneurs, using the Business Model Framework methodology.

IV. RESULTS AND DISCUSSIONS

4.1 The Emergence of Tamarind Pepper Jelly

Tamarind Pepper Jam is produced by the family group "Doce Caseiro Emanuel", located in Juazeiro-BA, in the Sertão Territory of São Francisco, where it develops fruit processing, such as tamarind, for the production of

sweets, jellies and candies, aiming at foster the productive chain of fruit growing.

The production began after financial difficulties of the couple, where the husband was an investor in the Stock Exchange and after having a great financial loss and failing in his profession of Technical in Agrimeasurement, his wife saw as a possible source of income the manufacture of home-made sweets, as he had acquired experience with producing sweets in a period of rehabilitation of his life. Thus, everything was started by improvising, in one of the rooms at the back of the couple's house, with a stove and an industrial pan used, artisanal way, the production of sweets in social projects of the church they attend.

In this way, the owner produced the candy, while his companion, by having experiences with the trade, was responsible for sales, starting the venture that soon after would be called "Sweet Homemade Emanuel".

Initially banana and guava sweets were produced, over time, other recipes were learned and put into practice, such as tamarind jam. At first, only candies and tamarind jellies were produced, without the pepper, however, as the owner is a "lover" of pepper and already know the recipe, decided to bet on the flavor that would derive from the junction of these two components, thus forming the tamarind bullet with pepper.

In this perspective, with the arrival of a new Coordinator at the Public Center of Solidarity Economy of the São Francisco Sertão Territory (CESOL-SSF), state program of the Government of Bahia, which aims to contribute to training, dissemination and commercialization of the products of the Popular and Solidarity Economy and Family Agriculture of the São Franciscano Territory, encouraged the manufacture of the Tamarindo Bullet with Pepper without the seed, which led, by chance, to the development of the Tamarindo Jelly with Pepper.

Launched in the 2nd edition of the Solidarity Economy Festival held in Salvador Shopping, in December 2019, promoted by the Secretariat of Labor, Employment, Income and Sport of Bahia (SETRE), was a great success, giving a significant profit to the productive group and until then, having a great demand of demand, being one of the main products for the strengthening of the enterprise. Tamarindo Pepper Jelly weighs 220 grams, is conditioned in glass packaging, sealed and costs R\$ 10,00.



Image 01. Tamarind Jam with Pepper

Source: Personal Archives (2019)

4.2 The Business Model - Tamarind Pepper Jelly

The Business Model Framework or "Business Model Canvas" is a methodology emerged in the mid-2000s, by the Entrepreneur, Speaker, Consultant and Management Theorist, the Swiss Alex Osterwalder, in his doctoral thesis by the *Faculté des Hautes Études Commerciales de l'Université de Lausanne - HEC Lausanne* [18].

It is a very efficient and simple tool, in a frame format, that allows to create or remodel, business models, considering 09 elements that every enterprise has: Value Proposition, Customer Segment, Distribution Channels, Customer Relations, Sources of Revenue, Main Resources, Main Activities, Main Partnerships and Cost Structure, collaborating with the entrepreneur, plan a successful and innovative business [18].



Image 02. Business Model Frame or "Business Model Canvas"

Source: Portal Dinamize (2020)

Through the data collected and analyzed, it was possible to understand the business model developed by the family group "Doce Caseiro Emanuel", with the production of Tamarindo Pepper Jelly, presenting the following characteristics:



Image 03. Emanuel Homemade Candy Business Model

Source: Elaboration by the Authors

Through the information of the Business Model Framework, it is shown as follows:

- **Value Proposition:** Produced in an artisanal way and much more than just a tamarind jam with pepper, an experience of pleasure, intensity, unparalleled, with health and quality.
- **Customer Segment:** In addition to ordinary people, commercial establishments such as delicacies, emporiums, stores of regional products, markets and bakeries.
- **Channels:** By Social Network *Instagram*, by phone contact, at home, in commercial establishments, agricultural fairs and solidarity economy and the application of messages and voice calls to *smartphones*, *Whatsapp*.
- **Customer Relations:** Personal service, by phone contact, *Instagram* and *Whatsapp*.
- **Sources of Revenue:** Direct sale, cash (cash/forward), and by credit or debit card.
- **Main Resources:** Financial, for the acquisition of goods and production materials, physical, such as equipment, supplies, production site, among others and human, the workers of the producers.
- **Main Activities:** Product marketing, production and marketing.
- **Main Partnerships:** Caatinga Emporium and Meu Sertão Emporium, spaces for the commercialization of Family Farming products, in particular the Semiárid Region of Bahia, Public Center of Solidarity Economy of the Sertão Territory of São Francisco, with support in the visual identity, study of economic viability and commercialization of products of Family Agriculture, located in the Sertão Territory of São Francisco, in Bahia, Sala do Empreendedor and Sebrae Juazeiro-BA Unit, with services and guidance on various themes related to entrepreneurship.

- **Cost Structure:** Water, packaging, internet, light, raw material, cleaning material, remuneration, label and transport, are the costs of the venture.

Therefore, from the analysis and discussion obtained and presented in the previous items, it can be noted that the viability of the production of tamarind jelly with pepper is an alternative for the utilization of the fruits, allowing their commercial use, increased market supply and marketing quality. Its processing is interesting, as it requires few equipment and is produced in an artisanal way.

V. CONCLUSIONS

In view of the above, the objective of the present study was to develop and characterize tamarind pepper jelly, through the data collected and analyzed, and it is possible to understand the business model developed by the family group "Doce Caseiro Emanuel" With the production of Tamarindo Jelly with Pepper and as an unpretentious production, it has positively modified the life of the entrepreneurial couple.

Therefore, the development of new products with high fruit proportions in their formulations and with good functional and nutritional properties contributes to diversify the market possibilities, especially if the products are attractive and practical. Due to the diversity of the fruits existing in the Northeastern Semiárid and the fact that they have properties suitable for processing, in addition to functional properties, it is demonstrated that this is a market that has growth potential in Brazil.

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